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SYDNEY: SATURDAY, JULY 23, 1921.

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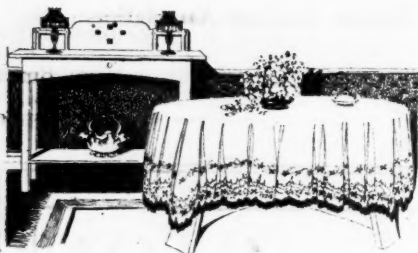
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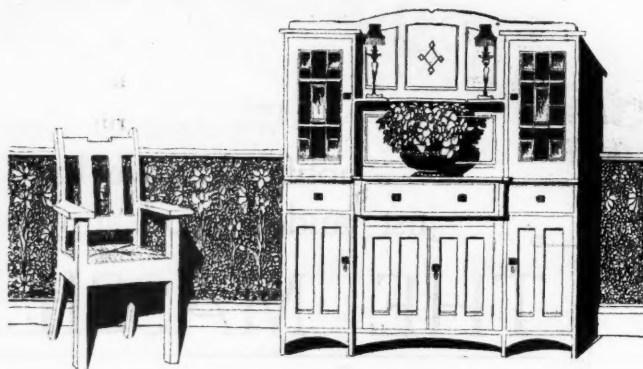


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LECTURES ON MEDICAL ETHICS.

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IV.

National Medical Service.

The relationships that exist between the medical man and the State are numerous and varied. Many of you may have noticed the persistent effort made in some quarters for the further extension of this relationship and the desire for what is known as the nationalization of medicine. At present the State makes provision in part for the treatment of the poorer classes in hospitals, for inspection of children in State schools, for the treatment of patients suffering from infectious, including venereal, diseases and from mental diseases, but otherwise there is no direct control by the State of medical services. In the United Kingdom there was introduced some few years ago a *National Health Insurance Act*, which made provision under Government supervision for medical attendance on the working classes or wage earners. A great deal of antagonism was at first shown to this system, or to many of its details, by the profession in the old country, but less objection seems to be taken to it now than formerly. The rate of remuneration fixed is much above that previously

obtained by medical men who attended the poorer classes of the community and compares favourably with that paid by provident societies in Australia, even under the terms of the new model lodge agreement. It must be said that the lot of the wage earner in times of sickness is a hard one, especially if the head of the family is himself affected and more particularly if he is not assisted by being associated with a friendly society. The well-to-do can afford to get the best medical and nursing attendance; the very poor find the hospital a welcome relief in times of sickness, but there are many people who have a natural dislike to charitable relief and who are unable to pay ordinary fees for medical, surgical and nursing attendance. Some kind of insurance for such people seems a necessity, but whether this can be best provided by the State is a matter of debate. It has been urged that the analogy between provision of educational facilities and of medical attendance is a close one. The State provides education up to a certain point for all who choose to avail themselves of it, whatever their means may be, and at the same time there are private educational establishments which may be used by the better off who do not feel inclined to have their children taught by the State. Why, it is said, may not the State similarly provide for the health of its citizens and allow any of them to provide their own medical attendance if they feel so

disposed? There is a good deal of reason in this line of argument. The matter is likely to be a very live one in the near future, one in which a large number of you may be personally interested. If any such scheme is brought forward, it should be seen that the remuneration for the State doctors is such as to allow of reasonable living conditions and that leisure is permitted for recreation and study and plenty of time for the careful clinical investigation of cases, so that adequate attention may be given to every patient.

It seems quite certain that a most important part of medicine, that of preventive medicine, should be undertaken by the State as is already done in large measure. It should be possible to provide much more adequate means than already exist for health examination from the clinical, bacteriological and chemical standpoints. It is very necessary that positions such as that of medical officers of health should be held by specialists in their departments and not by general practitioners. It is desirable that greater facilities should be afforded for the proper investigation and treatment of disease affecting persons of the poorer classes than now exist. Proper laboratory facilities might be provided with municipal help, possibly in connexion with general hospitals, as is already done in some districts. Whether the curative treatment of disease, however, can be undertaken by Government officials is doubtful. There is a great deal to be said in favour of the nexus that exists between the family practitioner and his patient. It is to be hoped that this connexion will never be superseded by the establishment of an official Government connexion. That there is much to be said in favour of and against the nationalization of medicine is evident to many who for the past few years have been closely associated with military work. As you probably know the usual pay of his rank is given to a wounded or otherwise disabled soldier up to the time of his discharge, which may take place at any period after his return to Australia. After his discharge, while any disability remains which is the result of his war service, a pension is payable to him. The pension may be equal to or even exceed the amount the ex-soldier is able to earn by constant employment in certain trades or callings, especially if he be a married man with children. It is a very cheering thing for a man to know that he himself and his family will be well looked after as long as he is totally incapacitated and that he will be helped during such time as he has any incapacity, but the knowledge of these facts in some cases does not tend to accelerate a patient's cure. In the case of a malingerer or a neurasthenic there is no inducement to bring the illness to an end by his own effort. Although the number of cases of this class in military practice is not large, still the condition exists. Those who enlisted for military service are held to be as amongst the most independent and conscientious members of the community. It therefore seems to be probable that if medical and other benefits are conferred on all persons who may be temporarily invalided, there will frequently be considerable delay in recovery. Many patients would probably get well more quickly if there were some strong impetus, such as the know-

ledge that their families would suffer from the illness of the breadwinners. A similar condition of affairs is well known to exist in connexion with accident insurance. Under such circumstances the work of the profession would tend to be greatly increased and as citizens and for your own good and that of the community, you should endeavour to see that any measure for the nationalization of medicine should be fair to the medical profession.

Whatever relationships may exist between the State and the profession there is no doubt that in time of war it is the duty of every medical man to do his share in assisting his country by giving his services in his capacity as a medical man. We have, as medical men, the privilege of being exempt under legal enactment from combatant service. In case of foreign invasion, however, medical men are legally available for medical service and it is ethically just that they should be ready for service abroad if they are needed.

Medical Military Service.

In medical military service one of the most obvious points is the restricted field of practice. The patients are young and middle-aged adults. If a soldier over the age of 45 is ill, he is liable to be regarded as suffering from senility and on that ground as unfit for further service. You will have to learn at an early stage the necessity of discipline and will have to take orders as to treatment, etc., from those who are your superiors in rank, though you may think them your inferiors in medical qualifications. You will find sometimes what might almost be called a condition of antagonism between the administrative and the more strictly medical departments of your work. The medical officer has to pay attention to the discipline and comfort of his patients and to see that their papers are properly filled in. He has to get the patients fit for service or to get them as well as possible before they are discharged to civil life. The work in a military hospital may be more like that of a sanitary officer and a food inspector than that of a medical officer in a civil hospital. Still these duties are of the highest importance and a knowledge of them is essential to the welfare and health of the men under his care. If on foreign service he may find that his duties are from the surgical point of view rather those of a first aid attendant than of a medical man and that his medical duties are directed much more to the comfort of the men and to the prevention of disease of various kinds or to the treatment of what appear to be trivial ailments, such as sore feet, corns and the effects of the numerous insect pests that have been classed among the minor horrors of war. It is his duty to make himself acquainted with these matters just as every practitioner is required to make himself acquainted with the more fascinating facts of civil medical and surgical practice. He may as ambulance or regimental surgeon also be called upon to face the same dangers as the combatant.

In this connexion I may again emphasize the necessity of protecting the interests of those men who went on war service. Many have given up their chance of a much coveted hospital appointment in order that they may serve their country. Some men who have done this, have on their return been appointed to

resident positions on the staff of hospitals in preference to recently qualified men. In cases where vacancies occur on the honorary staffs of hospitals, such vacancies have been filled temporarily, so that those absent on military service may not lose their chance of appointment when vacancies are being filled permanently.

Anyone who has remained in Australia, is expected to take no advantage of the absence of a practitioner on military service in increasing his own practice at the expense of the absentee. Already conduct of this kind has been treated by the Council as a breach of ethics.

Legal Obligations.

The first time a medical man comes into contact with the State in his professional capacity is when he seeks registration. In the case of a locally qualified man this takes place shortly after his graduation. By being registered a medical man obtains certain privileges, for example, he is not liable to be called to serve on a jury, he may, if he wishes, sue for fees for medical attendance and he is allowed to adopt a title that shows him to be the possessor of a medical qualification. Anyone may practise medicine in Victoria as long as he does not assume the title of doctor or any such term as indicates the possession of professional knowledge. On the other hand, registration on your University degree of M.B., B.S. does not give you the right to be called doctor, although the courtesy title of doctor is usually given to all qualified medical men. It is a customary thing for the term "doctor" to be taken by general practitioners and by physicians. Those who practise surgery exclusively and many specialists, unless they hold the doctor's degree, prefer to be called "Mr."

Once qualified, there is no power on the part of this State to take away your name from the Register, unless you leave the State or the world. It has been often suggested that authority should be given to some body (either the Medical Board, which is the registering body in Victoria, or some similar body) to deprive a medical man of his right to practise under such conditions as obtain, say in England, but this is impossible in the present state of the law. Even if a medical man qualified overseas should be deprived of his original degree, as may happen, he can still practise here. If, however, having been deprived of his degree by the school or college from which he has obtained it, he should leave the State and his name consequently be erased from the Registrar, his name would not again be restored to the Register, as he would have no registrable qualifications.

It is quite possible that in the near future some Federal control of medical registration may come into existence and power may be given to erase the names of undesirable members of the profession from the roll. As each State has at present its own registration laws, a medical man registered in one State cannot practise in another without becoming registered in the second State. Such restriction cannot well be removed without Federal legislation.

The giving of certificates for certain purposes is one of the duties of the medical man; they are given in very varying circumstances. Often, of course, a certificate is required for the personal convenience or

advantage of the person to whom it is given. It must be remembered that a medical certificate may be proffered as evidence in a court of law and for this, as well as for other reasons, it is highly important that any statement made in the certificate should be absolutely correct and should be a record of fact and not of inference, unless it be expressly set out that statements are expressions of opinion. As they can be used in this way, these certificates have a certain value and they should be paid for at the time they are given. One of the claims of the Victorian Branch of the British Medical Association in the new model lodge agreement is that certificates for certain lodge purposes should be paid for in addition to the ordinary lodge fees. No charge is made for the ordinary certificate of death which is required from medical men, but if a duplicate be required for insurance purposes, a charge may be made. Great care should be exercised to fill in certificates of death as accurately as possible. Some confusion seems to be caused at times by the words "first" and "second," which are found on the form used for these certificates. It is not necessary to put a primary or secondary cause in cases such as pneumonia, cerebral tumour, etc. A certificate of death must be given with great caution whenever the cause of death is uncertain. It is as well also to be reasonably sure that the subject of the certificate is not still in the land of the living. Cases have been known where money for insurance has been paid by the company when the person supposed to be deceased was still alive. Some practitioners pay a visit to verify the fact of death having taken place before signing a certificate of death. If an accident be the cause, or partly the cause, of death, a certificate of death must not be given, but the coroner or the police should be communicated with. An order for burial may be given by the coroner under such circumstances, or a coronial inquiry may have to be held. *A propos* of certificates, those of you who may in the future have large lodge practices, may be bothered occasionally by being asked for a certificate of the absence of a child from school through illness. It is sufficient in most cases that the parents' word be taken for the cause of the absence and it is not necessary for you to be continually occupied with signing such certificates; only in very exceptional cases need this be done.

The certificates which give you more worry and anxiety than any others are lunacy certificates. The fee for signing such certificates is purposely made larger than in the case of others. There is, of course, no compulsion for you to sign them. If you are in any doubt as to the sanity of the patient, it is wiser to decline to sign a certificate and to refer the case to an expert in mental diseases. When you are attending a patient who is suffering from early mental disease, especially of the melancholic type, it is always wise to get the opinion in consultation of an expert. It is a lamentable fact that many avoidable casualties are caused by the disinclination of the friends to have a patient regarded and treated as insane and even if he is so regarded, they often reveal a great reluctance in assenting to any form of certification or of restraint. Fortunately, we are coming to look upon such patients as invalids requiring treat-

ment, rather than as undesirable individuals in need of restraint. It is to be hoped that more facilities for their treatment in an early stage will soon be available. Mental outdoor and indoor clinics at general hospitals are much to be desired. If these clinics become available, do not hesitate in suitable cases to transfer your patient to the experts at these places or to share your responsibility with them. If you have to sign a certificate, be extremely careful first that you see and examine the patient alone and not with any other practitioner and also that the facts you mention in your certificate, whether facts observed by you or by others, are actual facts and not opinions or inferences. Usually your papers are carefully examined by the authorities at the institutions to which your patient is sent, but it is undesirable to have to make corrections to a certificate. While this is being done, the patient is not legally being kept under restraint. It is always possible also that you may be subjected to annoyance from the sense of injury felt after his discharge by a patient who believes himself to have been unjustly deprived of his liberty and who pesters you with correspondence or interviews or who threatens legal proceedings. So be sure of your facts in any such case and state them explicitly. If you are not quite sure of them, decline to have anything to do with the certification of the patient. Some medical men refuse to sign a lunacy certificate without receiving a form of indemnity signed by the nearest relation of the patient; such a precaution is a wise one. In many instances you may be able to get a patient to go voluntarily to a receiving house; this may be done without any certificate from a medical man, the patient himself signing a request for admission. Lately while at the Gladesville Mental Hospital in New South Wales, I was told that after a patient has once been in the institution it is not an uncommon thing for him to present himself again and again for admission when he is fearful of a return of his mental malady.

Very similar certificates have to be given in the case of inebriates who require to be kept under some form of restraint. You should exercise the same amount of care in signing these as lunacy certificates. Here again, the voluntary request of a patient for admission to an inebriate home may be made and should be availed of when possible. Sometimes a patient, addicted to a narcotic, as cocaine or morphine, desires hospital treatment and may be so treated with a kind of certification under the control of the master-in-lunacy, who, if the patient does not abstain from his narcotic, may resort to severer measures of restraint.

Insurance Examinations.

Certificates for insurance purposes are often required from medical men and insurance reports on patients submitted to them for examination are sometimes a considerable part of a medical man's practice. In answering the questions in an insurance report, great care must be taken to insure accuracy. A slipshod or careless method of examining or reporting is not at all in the interests of the company and it is usually held that the fee of a guinea is not too much for a complete and accurate report. In cases of industrial insurance where the sum involved is

small, a smaller fee is often proffered. If you examine a patient for an insurance company, the medical fee is the same whether the candidate is accepted or refused. For the agent, who is often the cause of the candidate being examined by you, the case is different; he obtains his commission only when a policy is issued. You must not allow yourself to be influenced by his desire that the patient should not be refused. It goes without saying that nothing in the way of sharing commission with the agent is permissible.

Sometimes reference is made to you by an insurance company as the medical adviser of a patient who is asking to be insured. Be very careful that you do not answer any questions in regard to your former patient without his consent which should, if possible, be in writing. There should be no violation of the rule of secrecy in such matters. Where the patient refers the insurance company to you, your opinion may be given.

Trouble has at times arisen from a medical officer of an insurance company visiting the patient of another medical man at the home of the patient for an insurance examination. Such a practice is not unethical, but it is courteous to acquaint the ordinary adviser of your proposed visit and to ascertain if he has any objection to it. It is better that a patient who wishes to be insured, should come to your surgery or office for examination rather than that you should go to his residence. There is an additional advantage, inasmuch as a patient who is visited at his house may on your arrival state his disinclination to be insured and refuse to be examined. In such a case, you would have no claim for a fee and your journey would have been futile.

Medical Evidence.

It is almost inevitable that sooner or later you will be called on to give evidence in a court of law, either in a civil or in a criminal case. In many instances, your position is simple. You may be called upon to testify to certain facts that have come under your notice, as for instance, that a patient has sustained a fracture of a bone from some criminal or other violence, or has had certain delusions or other evidence of unsound mind, which would render him incapable of making a will. In many cases, however, you will be asked to give an opinion on the facts you have observed, or you may be called as an expert in some branch of the profession. In giving evidence it is necessary to be very sure of your facts. If at any time you are brought into connexion with a case which renders you liable in future to be called as a witness in court, take very careful and accurate notes at the time of seeing the patient. You can refresh your mind from these notes before going into the witness box, or may refer, while in the witness box, to notes taken at the time you saw the patient. It may be worthy of remark that your notes, if so referred to or read, may be impounded as an exhibit.

In giving evidence as to facts observed by you in the course of medical attendance on a patient, it is necessary to remember that you must not violate the secrecy that should exist as to your patient's affairs. It has been pointed out that;

the legislature has very properly recognized that third persons are not to obtain the benefit of any communication between a patient and his medical adviser, because it is recognized as essential to his well-being that the fullest frankness and confidence should be possible in such circumstances.

The precise language of the Statute is:

No physician or surgeon shall, without the consent of his patient, divulge in any civil suit, action or proceeding (unless the sanity of a patient be the matter in dispute) any information which he may have acquired in attending the patient and which was necessary to enable him to prescribe or act for the patient. The exception as to sanity enables the court, when considering, for example, issues of testamentary incapacity in will cases, to get the advantages of medical observation and this is often the most material proof in the litigation.

It has been held by Mr. Justice Cussen in a case under the *Inebriates Act* that observations made by medical men, who are called upon to examine the alleged inebriate as to his mental condition, are also within the exceptions. The point which most frequently arises in this connexion is whether or not a proponent for a life insurance policy has wilfully concealed material facts as to his or her state of health. Obviously the evidence of any medical man whom the deceased assured had consulted prior to the issue of the policy would be most material to the question of the falsity of the representation made as to health. The court, however, found in the section an absolute prohibition, at all events, where the clear relation of patient and adviser is shown to have existed. The High Court upheld this decision and pointed out that the prohibition extended only to cases in which the physician or surgeon was consulted to enable him to prescribe or act for the patient. Hence a surgeon who had performed at a public hospital an operation would not be debarred from stating facts which he saw in the course of his attendance; that is, opinions which he could deduce from the local physical appearances. It is pointed out that the assurance company must have recourse to other means than the evidence of the medical man of establishing the allegation of fraudulent suppression of matters affecting the insurer's condition of health, mental or physical.

Usually a medical man does not offer to give evidence on any matter with which he is acquainted, but he is summoned by a subpoena which must be obeyed. Nothing but the most urgent professional duties would excuse non-observance of a subpoena. A judge may press or direct a witness to answer a question which the medical man thinks he should not answer. It may under certain circumstances be better for a medical man to be committed for contempt of court than to reveal a professional secret. It has happened under such circumstances that a medical man has asked for time to consult a lawyer as to his position before answering or refusing to answer. Of course, a doctor who answers questions by direction of a judge, would be exempt from any suspicion of unethical behaviour. It will be noted that the legal protection of a medical witness mentioned above applies only to civil and not to criminal cases and so it is in the latter that trouble is likely to arise.

It is very inadvisable that a medical man who is called to give evidence by one of the parties to a civil suit, should appear as a partisan of that side. He should give his evidence on scientific medical grounds and his evidence should be precisely the same as if he were giving it on behalf of the other party to the suit. You will probably have noticed in certain legal cases that evidence of a diametrically op-

posite nature has been given by medical men called as witnesses by the two parties of a suit. This is a regrettable condition of affairs. It is advised by Saundby that in matters of fact especially there should be a conference between the witnesses on the two sides, a procedure which is generally favoured by the legal gentlemen concerned. It is also advised that a medical witness who has been consulted as an expert by one side to a suit, but whose evidence is not required, should not give evidence on the other side. During his conversation with the other party in the case, he may have acquired information which he should not use to the possible detriment of the side from which he had obtained it.

All these remarks apply to matters of fact and not to matters of opinion on which differing views may be held.

There are certain public offices held by medical men in which ethical questions may arise. One of these is that of medical officer of health in a district. As has been pointed out previously, it would be better if such offices were held by specialists who devoted their entire time to their official duties, but this is not likely to happen for the present, especially in country districts, where the population is scattered and where it is the custom for one of the medical men in the district to be paid a small salary as local health officer. Notification of certain infectious diseases has to be made through the local council to him and he has usually to visit the place where patients suffering from the infectious diseases live, in order to see that proper precautions are being taken to prevent the spread of the disease. In carrying out his duties, the health officer has to be careful not to do or say anything that may be to the detriment of the medical man who is attending the patient. He must not reflect on the diagnosis, nor must he do anything to ingratiate himself with the patient or to attract the patient to himself subsequently as one of his own patients. If certain sanitary improvements are to be carried out by the patient or his relatives, possibly his own private patients, the medical officer of health should see that such sanitary measures are punctiliously attended to, although they may be obnoxious and costly to the patient or his relatives. If he has any suggestions as to the treatment of the disease in the patient of another medical man, they should be communicated to the medical man in charge of the case in the most amicable way.

Similarly public vaccinators, when vaccinating babies who are patients of other medical men, should be most careful to do nothing detrimental to their brother practitioners.

It will be your duty when in practice to report cases of such infectious diseases as are notifiable to municipal and State authorities. Before doing so, be reasonably certain of your diagnosis. If a notifiable disease be incorrectly diagnosed and reported, there would be grounds for a civil action for damages. Having made your diagnosis, be particular to report the case as soon as possible. This is necessary from the legal point of view and more so even because any delay in reporting will delay measures for preventing the spread of the disease. You may occasionally have some trouble in a case of suspected phthisis and

here your report should follow at once on the discovery of tubercle bacilli in the sputum. Till these are found, the patient may be regarded as non-infectious and so delay in reporting is of comparatively little importance in regard to the danger to the public health.

It is necessary to take very particular care in cases of venereal disease to carry out the provisions of the *Venereal Diseases Act*. On beginning practice you should all get a copy of that Act. If a medical practitioner becomes aware that any person con-

cal practitioner who was first consulted, does not hear from the patient or from some other medical practitioner during a specified time, he must report the fact together with the name and address of the patient to the inspector.

The medical attendant of the patient must give to the latter written forms directing his attention to the infective nature of the disease and the legal consequences of infecting others. He must warn the patient against contracting marriage until certified as cured and must give him or her also certain printed

information as to the disease. He has to give a certificate to the patient when he is cured, if requested to do so. The conditions under which cure is to be regarded as having taken place and in which a certificate may be given, are stated in the Act and should be rigidly adhered to.

You are all acquainted with the importance of *post mortem* examinations. The majority of resident medical officers at hospitals are keen on seeing or making such examinations. While this is a laudable desire on the part of a resident medical officer, he should as much as possible consider the wishes of the members of the hospital staff and of students in their desire to be present at such examinations. You have to remember that in any case in which there is doubt as to the cause of death or a suspicion that death was not due to natural causes; that is to say, that there is any likelihood of a coroner's investigation, the fact of the death must be reported to the coroner and it is for him to decide whether a *post mortem* examination is necessary or not.

It is the custom, in large towns especially, for *post mortem* examinations to be made by an expert pathologist; this is a proper procedure. Not all medical men have the necessary experience to give an expert opinion as to the cause of death in a case in which they have examined a body *post mortem*. In country places, however, the examination has often to be made by a general practitioner; if he is not the

ordinary medical attendant of the deceased, the latter should be given notice of the time and place of the examination, so as to allow him to be present if he so desires. If you have to make a *post mortem* examination, be sure that you do it thoroughly. In a case which occurred many years ago, the cause of death was given by the medical man who made the *post mortem* examination as apoplexy. Afterwards there was an exhumation and re-examination which resulted in the discovery of a fractured skull and some shot in the cranium of the deceased; the murderer was subsequently executed.

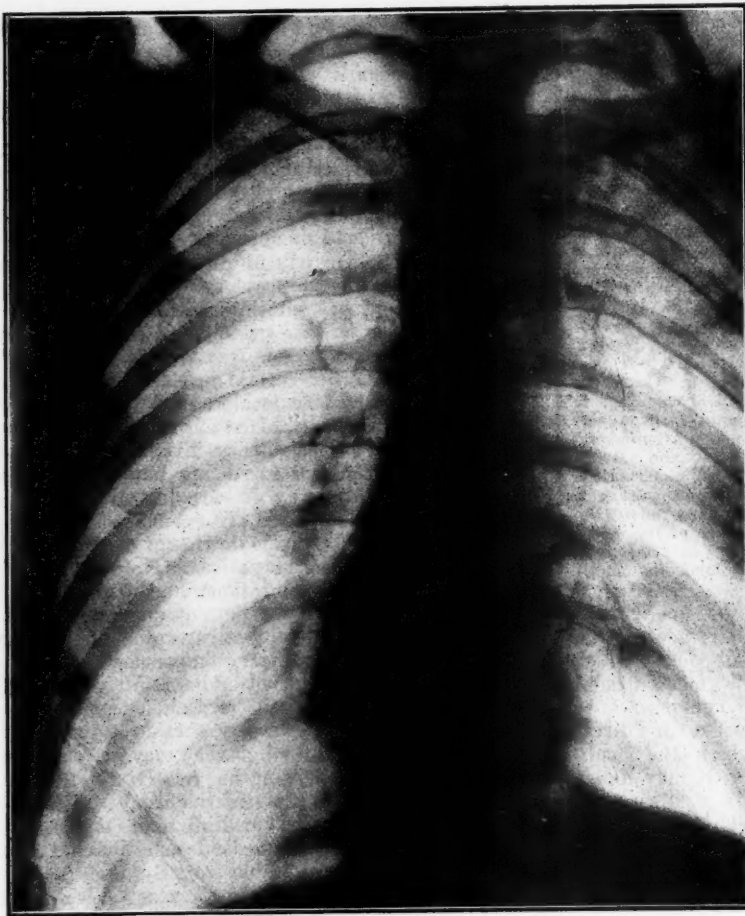


FIGURE I.
Skiagram of Chest, the Patient Holding her Breath and Straining.

sulting or attended or treated by him is suffering from any venereal disease, he has to give notice thereof to the medical inspector on the prescribed form and within a prescribed time. The name and address of the patient is not disclosed on this notice. The patient must present himself again after a certain specified time to the medical practitioner. If he wishes to change his medical adviser, he must inform his new attendant that he was previously under the care of another medical man and the new medical attendant must notify the previous medical adviser that the patient is attending him for treatment. If the medi-

Reports of Cases.

VOLUNTARY ARREST OF THE PULSE AND APPARENTLY OF THE HEART¹

By Sinclair Gillies, M.D. (Lond.), D.P.H. (Cantab.),
Honorary Physician, Royal Prince Alfred Hospital, Sydney;

and
H. R. Sear, M.B. (Sydney),
Honorary Radiologist, Royal Prince Alfred Hospital, Sydney.

M.I., 22, married, a highly strung, nervous woman. developed cough with little expectoration in August last. The cough continued for three months and a week before the patient was seen began to be accompanied by "turns" in which she collapsed, fell, twitched a little, became apparently unconscious and the veins on her chest and neck swelled. These attacks occurred every few minutes while she was awake and greatly alarmed her friends. She had lost weight, vomited her food and was "terribly nervy."

When seen on November 20, 1920, she had a continuous barking cough, which increased in frequency and loudness every few minutes, culminating in a straining effort, with pursed lips, dilated pupils, marked cyanosis and great distension of the cervical veins and of those in the first two intercostal spaces. During the effort her head fell back, she became partially unconscious and at the end of a minute to a minute and a half she twitched slightly, gave a long, expiratory sigh, relaxed her muscles and appeared absolutely moribund. In a second or two she opened her eyes, smiled and declared she was all right.

At the onset of the straining effort her pulse became smaller, quickly becoming imperceptible at her wrist, and her heart sounds disappeared. With the end of the attack her pulse and heart sounds returned and were rapid for a few seconds, quickly returning to their normal rate of 70.

Beyond the cough and these attacks nothing abnormal was discovered in any system. Her heart was normal in size and action and the pulse pressure was normal.

X-ray examination of her chest showed nothing abnormal in the interval between the attacks. A Wassermann test was carried out with a negative result. Her previous history was uneventful.

When she was admitted to hospital the attacks recurred every few minutes day and night for three days and were sufficiently alarming to cause considerable anxiety to an experienced sister and the members of the resident staff. Gradually, under isolation, bromide and iodide, they decreased in frequency and by Christmas they had practically disappeared; but disappointment about her Christmas gifts caused a relapse. In February she left hospital well, but returned in a week as bad as ever. Since she has improved and is quite well when interested, but tends to have minor attacks when left to herself with a possible audience. She admits that she can stop the attacks by taking a deep breath, but cannot break herself of the habit. Her mentality is poor.

Screen examination shows that when she voluntarily holds her breath and strains hard, her heart at once contracts to

about one-half its size, just as though its contents were milked out. At this period her pulse and heart sounds are absent, but the small, contracted ventricle can be seen contracting regularly. Immediately she ceases straining her heart assumes its normal size and the pulse returns.

In the absence of X-ray examination the case would be recorded as one of voluntary stoppage of the heart, as it presents the clinical signs of that condition.

Apparently what happens is that, through some abnormality of the fibres of the diaphragm surrounding the inferior vena cava and of the fascia in the upper thoracic region, the patient is able by straining to cut off almost completely the venous blood supply to her heart, with the

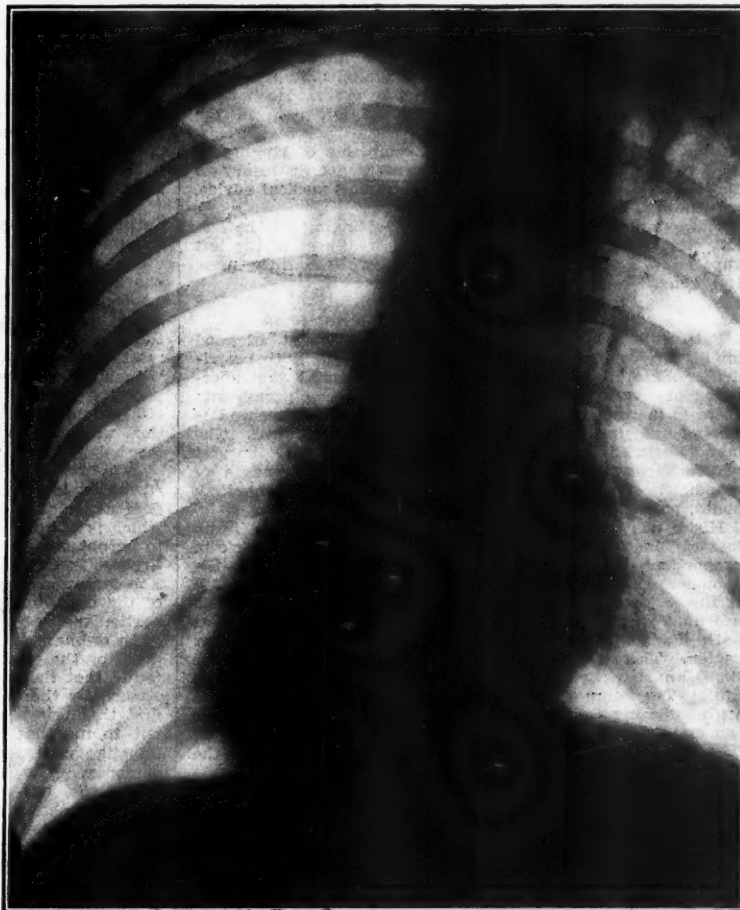


FIGURE II.
Skiagram of Chest, the Patient Breathing Naturally.

result that it quickly empties and then goes on contracting with empty chambers until she is unable to continue straining, when it refills.

This is well shown by comparing the skiagram taken while she was lying comfortably with that taken during straining. The position of the plate, patient and tube were identical for each picture. It will be seen that, not only the heart, but the mediastinal shadow diminishes in size, suggesting empty vessels.

The case seems worthy of record on account of the rarity of the ability voluntarily to suppress the pulse and heart sounds and on account of the radiographic finding.

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association at the Royal Prince Alfred Hospital on May 13, 1921.

A CASE OF HYPERPITUITARISM.¹

By A. E. Mills, M.B., Ch.M. (Sydney),
Professor of Medicine, University of Sydney.

The patient is a copper smelter, aged 42 years, who was admitted to the Royal Prince Alfred Hospital on April 13, 1921, complaining of general weakness and loss of power for the last three years. There was nothing of importance in the family history.

The man was born in New South Wales and has lived here all his life. Fifteen years ago he realized that his hands were becoming larger. Eight years ago he noticed that he needed larger boots. About the same he noticed that he needed a larger hat. Eight years ago he took size 6½, but now takes size 7½. Four years ago he began to develop a certain amount of stiffness in his shoulders and later he noticed that he was unable to extend his elbow fully. Eighteen months ago he contracted a slight limp and he noticed that one leg was longer than the other. He had no pain until fifteen months ago; then he got pain in the muscles of his arm and back and down the back of his legs. He has not had headaches, but he complains of ringing in his left ear. Two months ago the patient got an injury to his left knee while working. After obtaining medical advice, he was admitted to the hospital.

The symptoms now present are: (i.) Ringing in the left ear, (ii.) slight pain in the arms, (iii.) weakness of the left knee joint, (iv.) inability to breathe freely through the nose, (v.) general weakness.

Physical Examination.

Patient is a big man of 90.6 kilograms weight, of good intelligence and memory. He has a large head, with prominent supraorbital ridges; his external occipital protuberances are very pronounced. His nose is very prominent; there is increased size of the nasal bones. The forehead is sloping and the zygomatic arches are very prominent. The mandible is enlarged, but not out of proportion to the rest of his face. There is a bony nodule on each angle of mandible. There is general enlargement of all the limb bones, particularly at the articular ends.

His hands and feet are greatly enlarged, but there is no loss of function. His hands are spade-shaped and thick in proportion to length. There is loss of movement at the shoulder joints, abduction being particularly limited. He is unable to extend the right elbow joint fully; the wrists are unaffected. There is marked limitation of movement at both hip joints. Scoliosis is well marked in the lumbar region. There is general paresis of all the muscles of the limbs and back, particularly marked in the hamstrings and glutei. The tongue is large and broad; a deep median furrow, with radiating fissures and enlarged papillae, is noted. The incisor and canine teeth of the lower jaw are spaced out. The palate is deeply vaulted; there are depressions in the canine fossae of the maxillary bones.

No changes were detected in the other systems.

An X-ray examination showed that the limitation of movement in the shoulder and hip joint was due to osteophytic out-growth. The skiagram also showed the well known mushrooming of the phalanges, the increase of the *sella turcica* and a great increase in the density of the long bones. The question naturally arises: "Are the osteoarthritic changes due to the over-action of the anterior lobe of hypophysis, or are they a response to a stimulus of infective nature?" The evidence is quite insufficient to give an answer to the question.

Reviews.

SKIN DISEASES.

In the second edition Dr. Whitfield's "Handbook of Skin Diseases" has been thoroughly revised.² The author describes many of the important facts of the most modern prac-

tice in skin diseases. As the title of the book suggests, it is one in which the reader can easily look up any subject in connexion with skin diseases and obtain an idea as to diagnosis or necessary treatment. The book is comparatively small in size. It is not crowded with needless references. It should be a splendid book for students and general practitioners, as the subjects are briefly but clearly dealt with.

Dr. Whitfield has had much personal experience in the study of the vaccine treatment of skin diseases. It is therefore interesting to learn the result of his experience, which is not altogether favourable. The vaccine treatment of skin diseases has, unfortunately, failed to support the reports of its early supposed successes. In severe nodose acne, Wright's anti-staphylococcic treatment is recommended and the author draws attention to the fact that these fluctuating nodules should not be incised, as the scar left may be very disfiguring. They may be pricked and the pus expressed out, a 2% lysol lotion being used to prevent the infection of new follicles. Vaccine treatment is also prescribed in the treatment of furunculosis. The early incision of a boil is not recommended, as it must be remembered that a boil is not an abscess. When a boil shows a superficial softening, it may be pricked, to relieve pain and tension; but the core or adherent slough has still to come away in its own time. In carbuncle a staphylococcic vaccine is recommended.

In speaking of the treatment of "wet" skin diseases, the author says: "One often hears that no water must touch the surface of a wet eczema and, in consequence, the part is often allowed to become fouled with dirt and dried discharge." Dr. Whitfield's advice in this matter is a very important one. If a scraping be taken from one of these cases and examined under the microscope, it will be seen that there is a considerable amount of foreign irritating matter present, which cannot be removed without bathing with some watery solution. Dr. Whitfield recommends his patients to employ a bath at 37.2° C. in water containing 100 grammes of salt in each ten litres of water, i.e., 1% solution, which is very slightly hypertonic in relation to human blood.

A new disease, provisionally named by Dr. Whitfield "demodex impetigo," is introduced in this book. Dr. Whitfield says: "I have recently come across a series of cases which is of some interest, in that, while appearing clinically to be not very unusual cases of impetigo, they have an entirely different aetiology and call for a different treatment. The symptoms are those of an ordinary *impetigo contagiosa* of the circinate type, but so far I have only identified this particular disease in adults. The edge of the lesion is formed as in ordinary impetigo by the remains of the bulla and if a piece of the roof of this is put under the microscope it is found that there are present numerous examples of what is apparently the ordinary *Demodex folliculorum*. I thought at first that this was a new discovery; but Dr. Pernet pointed out to me that the association of the demodex in ringed impetigo was mentioned in the British Museum treatise on demodex. The describer was Dr. Herman Lawrence, of Melbourne, but the reference was not given. After some trouble, I have succeeded in finding the reference, which was a demonstration of cases and microscope specimens by Dr. Lawrence in 1915. To him, therefore, belongs the credit or priority of observation." Dr. Whitfield recommends a sulphur ointment in this form of impetigo.

In dealing with the treatment of skin diseases with X-rays, Dr. Whitfield has come to the opinion that the older method of small doses, repeated at short intervals, gives better results than the method now adopted of giving a full Sabouraud's dosage at one treatment. This method, he considers, gives better results in many skin troubles, especially so in the treatment of rodent ulcer. In the treatment of keloid the author does not mention radium and yet, in the majority of recently produced books upon dermatology, radium is recommended as the best method of treating this condition. The clinical methods of examining skin affections and the pathology of the different diseases are briefly, but at the same time well, described.

Dr. Whitfield's text is based upon his own large experience and his book is one which should be of great value to medical students and general practitioners, as they may obtain a reliable working knowledge without wading through a mass of somewhat puzzling literature such as is found in the larger treatises upon the subject.

¹ Read at a Meeting of the New South Wales Branch of the British Medical Association at the Royal Prince Alfred Hospital on May 13, 1921.

² A Handbook of Skin Diseases and Their Treatment, by Arthur Whitfield, M.D., F.R.C.P.; Second Edition, revised: 1921. London: Edward Arnold; Demy 8vo., pp. 291, with 56 plates. Price, 18s. net.

The Medical Journal of Australia.

SATURDAY, JULY 23, 1921.

Medical Ethics.

In this week's issue we publish the last of a series of four lectures on medical ethics delivered by Dr. A. V. M. Anderson to the students in the Medical School of the University of Melbourne. There are many members of the medical profession in Australia who need no guidance in these matters of correct professional behaviour. Others there are who are occasionally in doubt concerning the proper ethical procedure in certain circumstances. There is further a third group whose tendency to adopt commercial precepts in the place of professional methods indicate that they have paid little attention to the written and unwritten laws on medical ethics in the past. Lastly the youngest graduates have still to learn by experience and consequently need assistance at the outset of their careers. We feel convinced that every one of our readers will appreciate the value of these lessons, so admirably expressed and so skilfully arranged by Dr. Anderson. Those who belong to the first group, will find the lectures none the less interesting, because they express things well known and invariably applied. Members of the third group may endeavour to resist the doctrines contained in these four healthy sermons. There appears to be an irresistible temptation to some practitioners to employ methods of advertising themselves and their alleged knowledge and skill for the purpose of attracting patients. It is useless for these men to plead that they are not parties to these ethical misdeeds and that others, over whom they exercise no control, are the responsible sinners. Some members of the medical profession openly and frankly worship mammon and practise their profession solely as a means of earning money. It has been pointed out in these columns on many occasions that the practice of medicine is a privilege and that medical practitioners have a sacred obligation to those who entrust themselves to their care. The law demands of a medical practitioner that he shall exhibit a reasonable amount of know-

ledge and a reasonable degree of skill in the treatment of his patients. A man's conscience tells him that he should employ expert knowledge and real skill, not the mere legal minimum of each. It is not to the advantage of the practice of medicine, regarded in the abstract, that a practitioner should hurry through his work and exhibit carelessness or want of scientific ability when he has many patients to attend. Medicine cannot be followed as a trade; the money grubber is not a good doctor and is unworthy to be a custodian of the great traditions of a noble calling.

Dr. Anderson has spoken with measured emphasis on the value to a medical practitioner of the good opinion of his colleagues. The judgement of his compeers may be regarded as a severe but just estimate of the real worth of a practitioner. Patients often are misled by the glowing accounts given by a doctor of his own excellent achievements. They are usually bad judges of scientific knowledge and ability and not infrequently they mistake daring for surgical skill. No better advice to a young graduate entering the profession can be given than that he or she should endeavour on all occasions and under all conditions to deserve the esteem, respect and affection of his or her colleagues. Later on the practitioner learns that minor shortcomings in professional ethics invariably create a breach in the friendly relations with other doctors and that this breach widens until it can be spanned only by a superhuman effort and a very considerable sacrifice. It seems such a small matter to permit a laudatory notice to appear in a newspaper or to grasp an accidental opportunity to treat another practitioner's patient. Honour does not admit of small digressions. Moreover, beginnings, as a rule, are small and an imperceptible increase occurs on repetition.

In the olden days the doctor and the squire of the parish were regarded as patterns to imitate in regard to deportment, correct speech and suitable personal appearance. To-day it is by no means unusual to meet a medical practitioner with impolite manners, uneducated and discordant speech, thoughtlessness in conversation and untidiness in dress. The term gentleman should be applicable to every male medical practitioner. It might be of advantage to the profession of the future if our medical schools re-

quired all entrants to bring with them a certificate of having passed through a "school of good manners." These details may be regarded by some as too small to deserve mention. We hold that the traditions of the medical profession cannot be maintained unless its members have an intuitive sense of the dignity they have to uphold. The essential virtues of the doctor are modesty, patience and earnestness. To these the added attributes of honesty, morality and frankness will be linked up by a natural process. The lessons taught by Dr. Anderson may serve to develop these virtues in our younger practitioners and possibly to re-awaken them in a few who, by mischance, carelessness or lapse, have allowed their obedience to the ethical rules to have become lax.

THE PROGNOSIS OF PULMONARY TUBERCULOSIS.

The prognosis of disease is probably the most difficult and at the same time the most neglected aspect of the art of medicine. The student is instructed more or less thoroughly in the principles of diagnosis and treatment; he is expected to learn from his own experience the science and art of prognosis. He soon discovers in private practice that a patient's relatives are more concerned with the ultimate outlook than with the intricacies of diagnosis. The paramount question is not: "What is the disease from which the patient is suffering?" but "Will he get well?" Too frequently the doctor's opinions are a matter of guess work. The prognosis of most diseases is good and optimism brings comfort and relief to patient and friends. With years of practice, however, a physician learns by intuition to give a shrewd opinion on the question of recovery. The opinion is not deduced as a rule from definite symptoms and signs, but it is the intuitive notion of a man who has learnt the art of prognosis in the school of his own experience.

Dr. Fred. H. Heise, of the Trudeau Sanatorium, New York, has made an attempt to estimate the factors of prognosis in pulmonary tuberculosis.¹ The prognosis of tuberculosis has always been considered difficult in the extreme. The aphorism of the late Samuel Gee will be remembered: "Never give a definite opinion as to how long a patient suffering from phthisis will live, for the only certainty is, that if you do, you will be wrong." But Dr. Heise is not deterred by this famous opinion from summing up the general principles which are a guide in the prognosis of the disease. His deductions are made from a consideration of the cases of past and present patients of the Trudeau Sanatorium. In one group of 300 patients attention was directed to the presence or absence of râles and their increase or diminution in area during the patients' residence in the Sanatorium. It was found that in 86% of patients râles

were discoverable on stethoscopic examination. Of these the "râle areas" remained stationary in 18%, increased in 27% and decreased in 27%. They disappeared altogether in 11%. In 3% of patients râles previously absent made their appearance during treatment. Consideration was also given to the X-ray appearances of the lungs of the same patients. The skiagraphic changes diminished in 69%, remained stationary in 17% and increased in 14%. Dr. F. B. Trudeau tabulated the percentages of 979 patients alive five to eleven years after discharge from hospital. Of those whose râle areas had remained stationary during treatment 89% were alive, 83% of those whose râles had decreased were alive and 68% of those whose râles had increased were still living. It is difficult to accept these results without question. Physicians differ to extraordinary degrees in their estimates of physical signs. Coarse râles are easy enough to elicit, but fine râles or crepitations are discovered as frequently by some as they are missed or not found by others. Moreover, it is the experience of every clinician that râles are notoriously inconstant. Râles heard under one clavicle or at the apex of a lower lobe to-day may have vanished beyond the limits of hearing to-morrow. Coarse, consonating râles are more constant, but they are the index of advanced and almost hopeless disease. Prognosis based on skiagraphic appearances is open to similar objections. No two X-ray plates of the same patient, even when taken on the same day, are alike. The immobility of the patient, the time of exposure, the mode of development and the thickness of the plate determine largely the skiagraphic appearances. Moreover, it is extremely difficult to decide what appearances are due to active and what to healing or healed tubercular processes. Other investigations, open to less criticism, show that patients with incipient or inactive disease have a much better outlook than those in whom the disease is active or moderately advanced. Ten years after discharge 21% of patients with incipient disease and 54% with moderately advanced disease, were dead. The figures for patients with quiescent and active disease were 23% and 52% respectively. Twenty years after discharge 58% of patients who had suffered from incipient disease, and 59% of patients with apparently arrested disease were dead. The corresponding figures for patients with moderately advanced and unimproved disease were 85% and 83%. Attention was also given to the bearing of hæmoptysis and the finding of tubercle bacilli in the sputum on the prognosis of the disease. The outlook was comparatively good when repeated examination of the sputum failed to reveal the presence of tubercle bacilli. This good prognosis was unaltered even by repeated definite hæmoptyses. The prognosis was unfavourable when tubercle bacilli were isolated, whether or not hæmoptyses occurred.

Dr. Heise adds a large number of points which might assist in a determination of the probability of length of life. Pregnancy, unhealthy environment, a loss of one-fourth of the body weight, failing digestion and inability to sleep, fever, rapidity of the pulse, inverse temperature elevations, cyanosis, sudden diminution of sputum accompanied by aggravation of symptoms, the presence of tubercle bacilli in

¹-Canadian Medical Association Journal, May, 1921.

the sputum, the occurrence of pneumothorax in advanced disease and central or basal situation of the lesion are unfavourable points in prognosis. More favourable manifestations are submission to treatment and determination to get well, gain in weight, apical situation of the lesion, diminution in the quantity of sputum, pleurisy with effusion and the occurrence of spontaneous pneumothorax early in the disease. The statement that outdoor workers becoming ill with pulmonary tuberculosis have a less favourable prognosis than indoor workers will not meet with the approval of many physicians.

Dr. Heise has attempted a difficult task. That he has not quite succeeded is not due to his lack of energy or ability. It is difficult to apply methods of precision to the interpretation of clinical symptoms and signs.

PROTEIN DEFICIENCY AND PELLAGRA.

Ever since Casal and Frapoli recognized and described a peculiar affection of the skin characterized by roughness, and ever since this condition has been known under the name of pellagra, clinical observers have noted that it is in some way associated with an insufficient diet. During the past few years the question of the aetiology of pellagra has occupied the attention of many hygienists and various attempts have been made to ascertain the exact nature of the essential cause. The first important fact to transpire from these studies was that the disease is apparently due to a lack of protein in the diet. Bigland, however, found that pellagra occasionally appeared in a person whose diet contained protein in sufficient quantity to cover all his physiological needs. Experimental evidence has been adduced to show that the disease can be produced by feeding persons on a diet deficient in animal proteins and that cure can be effected in certain cases by the addition of animal protein to the diet. A considerable amount of work was carried out about ten years ago by a commission in South Carolina, but the information put forward as a result of this investigation did not prove of great utility, chiefly because the details concerning the diet of the affected people could not be accurately measured and analysed. The work of the commission, however, was not by any means devoid of value, since many data were presented that could be used in future investigations and since certain anomalies were brought to light, making it abundantly clear that the aetiology of the disease could not be explained merely on the assumption of a deficiency of protein. More recently Drs. J. Goldberger, G. A. Wheeler and E. Sydenstricker have taken up the study more or less where the Thompson-McFadden commission left it and, profiting by a criticism of the failure of the earlier workers, introduced into their programme precautions of an essential kind.¹ In the first place they recognized the necessity of investigating the seasonal incidence of the onset of the disease, in order to correlate the appearance of the disease with the type of diet taken immediately before the symptoms appeared. Unfortunately, the same difficulty was met in this investigation as had been met by the members of the com-

mission in regard to the diet of individuals. After various attempts they were compelled to estimate the diet for each household and to employ a method of averages to reduce the diet to individuals. A further difficulty presented itself in regard to the diagnosis of pellagra. It was decided to ignore all but undoubted and pronounced cases. This means that the so-called non-pellagrous groups must have included many persons slightly and atypically affected with the disease. The importance of this will be recognized when it is pointed out that the information was used by comparing the diets taken by the individuals of the two groups, the pellagrous and the non-pellagrous. Notwithstanding these serious defects, the investigators were able to show that persons (in the great majority children), about to develop pellagra were subsisting on diets poorer in animal protein (lean meat, milk and butter, cheese and eggs) than the diets of those who remained in good health. A closer study revealed the fact that the supply of protein, measured in accordance with its caloric value, was not actually below the minimum amount claimed by Benedict to be essential. The diets were not ascertainably deficient in the fat-soluble A factor, but there appeared to be some lack of mineral constituents. The authors find it difficult to attribute the onset of the disease to a lack of protein. They suggest on a closer consideration that the form of protein contained in ample quantity in the diet of the healthy, but more or less lacking in the diet of the persons destined to become pellagrous, is the determining factor. Regarded as a source of amino-acid, protein may have a varying physiological value. Unfortunately the researches have not indicated exactly which of the amino-acids were deficient in the diets supplied.

The suggestion that pellagra may be due to a deficiency of one or other of the more essential amino-acids which cannot be synthesized within the body, is extremely interesting. Gowland Hopkins demonstrated a few years ago (1916) that when rats were fed on a diet containing casein from which tryptophane had been extracted, they lost weight steadily and ultimately died unless troptophane were added to the diet. It is known that the body cannot synthesize the indole ring. Similarly diets deficient in arginine and histidine were found to lead to loss of weight. The body has a limited power to synthesize the guanidine and iminazole groups and consequently when animal protein which always contains them, has been deprived of them, the diet proves insufficient to support continued growth. Much information was gleaned from these studies, but inasmuch as they were conducted with rats and in the majority of instances the diets were completely freed from the special amino-acid, no indication was given of any association between a diminished supply of any particular amino-acid and pellagra. Before a final reply can be given to the question: what is the exact cause of pellagra? it will be necessary to watch the effect of feeding human beings on a diet of known composition, deficient but not devoid of certain of the amino-acids which the body cannot synthesize. Conversely, pellagrous individuals should be fed on their ordinary diet with added tryptophane, histidine or other amino-acid. In this way a definite reply to the question might be given.

¹ A Study of the Relation of Diet to Pellagra Incidence, *United States Public Health Service Reports*, March 19, 1920.

Abstracts from Current Medical Literature.

PHYSIOLOGY.

(39) The Relation Between Respiration and the Pulse Rate.

The regulation of the pulse rate is carried out primarily by the heart itself and the respiratory movements influence the pulse rate only in so far as they bring about changes in the circulation. They call into action the regulative mechanism possessed by the heart (F. A. Bainbridge, *Journ. Physiol.*, August, 1920). In man, the dyspnoea induced by breathing air containing a slight excess of CO_2 is associated with an acceleration of the pulse. Bainbridge investigates the various theories to account for this. (i.) That when the respiratory centre is unusually active, an overflow or irradiation of impulses from the respiratory to the cardio-inhibitory centre takes place, thus lessening the tone of the cardio-inhibitory centre. The chest of an animal was opened and artificial respiration carried on by means of a pump. The activity of the respiratory centre, as measured by the respiratory movements of the chest wall, was increased by raising the tension of CO_2 in the blood. There was found no increase of pulse rate, although the respiratory movements became very violent. (ii.) That afferent impulses, passing from the lungs, set up by distension and collapse of the lungs, alter the pulse rate and are responsible for the inspiratory quickening and expiratory slowing of the pulse. Stimulation of the central end of the pulmonary branches of the vagi caused no change in the pulse rate, although the respiratory movements were completely inhibited. Further vigorous artificial respiration produced acceleration of the pulse rate whether the pulmonary branches of the vagi were cut or not. This fact suggests that with vigorous artificial respiration and blowing out of CO_2 from the blood, the altered reaction of the blood is responsible for the increased pulse rate. This was supported by the evidence that vigorous artificial respiration and blowing in CO_2 to compensate for the over ventilation caused no increase of pulse rate. The activity of the cardio-inhibitory centre is thus increased by a rise and lessened by a fall of hydrogen ion concentration. It is not considered probable that variations in the hydrogen ion concentration of the blood can play any effective part in regulating the pulse rate in the normal individual, as the reaction of the blood is practically constant, except in muscular exercise, and during exercise other factors affecting the pulse rate override the influence of the altered hydrogen ion concentration. (iii.) That the increased respiratory movements influence the pulse rate by increasing the return of blood to the heart, thereby evoking reflex acceleration of the heart. The respiratory movements themselves thus produce circulatory changes which in-

fluence the pulse rate. The means available are the depressor nerve and the reflex path, whereby diastolic distension of the right side of the heart evokes acceleration of the pulse. The acceleration of the pulse rate, associated with dyspnoea, is due to the fact that the more vigorous respiratory movements lead to a larger return of blood to the heart. The diastolic filling leads to reflex quickening of the pulse rate. The consequent rising arterial pressure brings the depressor reflex into action and the pulse slows.

(40) Influence of Various Factors on Pulse Rate.

Walter M. Coleman (*Journ. Physiol.*, December, 1920) records some observations on the rate of the heart beat in animals and the number of steps taken in walking. He finds a correlation between the discharge of nervous impulses causing movement and the nervous discharge regulating the rate of the heart beat. In three different animals the heart beats were 56, 60 and 80 and the steps taken in walking were respectively 56, 60 and 80. Observations were made on man. When a man walked with an easy swing his pulse rate became that of the steps within the limits of 90 to 120 a minute. If the attention was concentrated and the spine held stiff there was no correlation. The pulse was then taken and the subject asked to walk in an indifferent mood. Fourteen out of 24 subjects stepped at the rate of the pulse. The effect of attention to periodic sounds was tried. A metronome was set beating at rates faster and slower than the pulse. In nine cases out of ten the pulse rate became that of the metronome, within certain limits. Subjects singing with others were asked to pause in the song and test the pulse. It was found, as a rule, that the pulse kept time with the music. Sudden changes in intra-thoracic pressure from sudden opening and closing of the glottis may be concerned in controlling the heart. The pulse rate of one person is counted by another and then by himself. If the rates differ, he takes his own pulse again, this time only counting it mentally, with the throat relaxed and open. It will now agree with the first determination. Or, again, by counting the pulse aloud in a forcible whisper, calling each count a little ahead of the pulse rate, the rate is quickened 10% to 11%. Then it is taken with the count slightly dragging after the beats; this retards the rate 10% or 15%. Coleman points out that stiffness or rigidity of the body interferes with the response of the heart to rhythm. For each act of attention, whether sensory or motor, there occurs a slight twitch or pause in the respiratory movement. Thus the muscular wall of the body, acting with the diaphragm and aided by the glottis, probably gives mechanical stimuli to the heart, bringing it to the new rate.

(41) Flight of Bats.

H. Hartridge (*Journ. Physiol.*, August, 1920) describes some experiments in which the flight of bats was observed

under conditions which excluded their guidance by vision or touch. In one experiment a series of threads were hung across a room and the room effectively darkened. Bats were found to be in quite unconcerned flight. No indication was observed that any of the bats flew into one of the threads. It is suggested that bats during flight emit a short wave length note and that this sound is reflected from objects in the vicinity. The reflected sound gives the bat information concerning its surroundings. The following facts fit in with this hypothesis: (i.) Bats are known to emit short wave length sounds above the audible limit of most people. (ii.) Bats have well developed pinnae. (iii.) Bats in flight are not disturbed by man's speech, which is below their audible limits, but by clapping the hands or tearing of paper. These sounds reach their audible range and disturb the acuteness of audition that is directing their flight.

BIOLOGICAL CHEMISTRY.

(42) The Transportation of Carbon Dioxide in the Blood.

L. W. Smith, J. H. Means and M. N. Woodwell have studied the distribution of carbon dioxide between the cells and the plasma of arterial and venous blood in normal individuals and in patients suffering from various pathological states (*Journal of Biological Chemistry*, January, 1921). Samples of blood were drawn from the arm vein or artery under oil and analyses were made of the CO_2 content, both of the whole blood and of the blood after centrifugalization of the plasma. At the same time the proportion of cells to plasma in each sample was determined by means of the haemocrit and the relative amounts of CO_2 in the cells and in the plasma of a unit of blood was calculated. The average CO_2 content of eight samples of normal arterial whole blood was 50.4 volumes per centum and of the venous 58.7 volumes per centum. When on the basis of the observations with the haemocrit, the distribution of the CO_2 content of arterial and venous whole blood between the cells and plasma was studied, interesting averages were found of 35.8 volumes of CO_2 in the plasma of 100 volumes of arterial blood, and 36.5 volumes in that of venous blood. At the same time the cells of 100 volumes of arterial blood contain on an average 14.6 volumes of CO_2 , while those of venous blood contain 22.2 volumes. In other words, as blood passes from artery to vein it gains on an average 8.3 volumes of CO_2 per centum, but of this less than one volume per centum is gained by the plasma, while 7.6 volumes are gained by the cells. The maximum and minimum figures showed that the plasma gained as it became venous from 0.0 to 1.8 volumes per 100 volumes of whole blood, while the cells gained from 4.2 to 10.4 volumes. The obvious conclusion from these figures is that the transport of CO_2 is accomplished

mainly by the cells. The same was found to hold true in anaemia and in certain other diseases, even though, because of alterations in the ratio of cell volume to plasma volume, the actual distribution of CO_2 between cells and plasma is altered.

(43) Sugar in Blood.

R. L. Mackenzie Wallis and C. D. Gallagher have devised a method for the microchemical estimation of sugar in blood, which requires the use of no more blood than may be obtained from a simple prick of the finger (*Lancet*, October 16, 1920). The drop of blood is collected on a small piece of absorbent paper and weighed immediately on a torsion balance. The weighed paper and blood is then inserted into a small test tube and 3.6 c.cm. of distilled water added. The extraction is allowed to proceed for not less than half an hour and not more than 45 minutes. The proteins and other interfering substances are then removed by means of tungstic acid precipitation and the water-clear filtrate obtained used for the estimation of the sugar. The estimation depends on the property of glucose present to reduce an alkaline copper solution to cuprous oxide and the production of a deep blue coloured compound by chemical interaction between the cuprous acid and a solution of phosphomolybdic acid. The amount of glucose is estimated by comparing the colour produced with that developed by a known standard glucose solution. For the estimation 2 c.cm. of the clear blood extract and 2 c.cm. of the copper solution are placed in one of the special boiling tubes. To another tube is added 2 c.cm. of the diluted standard solution and 2 c.cm. of the copper solution. Both tubes are thoroughly shaken and placed in a bath of vigorously boiling water for six minutes. They are then removed from the bath and treated at once with 2 c.cm. of the phosphomolybdic acid solution. A deep blue colour appears in both tubes. The contents are then diluted with water up to 12.5 c.cm., thoroughly mixed and compared in a colorimeter. The percentage of sugar is readily calculated from the reading.

(44) Thrice Boiled Vegetables.

L. O'Reilly and E. H. McCabe have measured the quantity of available carbo-hydrates in thrice boiled vegetables (*Journ. Biol. Chemistry*, March, 1921). Since the introduction of vegetables boiled with three separate lots of water into the dietary of diabetic persons, it has become important to measure more exactly the amount of carbo-hydrate available for nutriment in different vegetables after this treatment. It has usually been assumed that vegetables of low content in carbo-hydrate are rendered practically free from starches and sugars by being boiled with three portions of water. The authors have estimated the amount of available carbo-hydrate by the addition of taka-diastase. The vegetables, in quantities of 100 grammes, have been

boiled with one or two litres of water for 30 minutes on each occasion. The extraction has been more complete when two litres of water have been employed. In no case has it been possible to free the vegetable from carbo-hydrate when one litre has been used; but in the case of vegetable marrow, celery and lettuce this has been accomplished with two litres of water. As it is a matter of common knowledge that the addition of a small amount of sodium bicarbonate to the water in which vegetables are boiled, causes the vegetables to become softer in consistency, it has been thought worthy to test the power of water containing 0.05% to 0.1% sodium bicarbonate to extract the carbo-hydrate from vegetables. The presence of sodium bicarbonate has increased the extraction. A considerable difference has been noted with cauliflower. When two litres of water containing sodium bicarbonate have been used, there has been found an increased extraction of carbo-hydrate with cauliflower, turnip and cabbage. By boiling with two litres of water on three occasions spinach, asparagus, turnips, beet and onions are rendered free from carbo-hydrate for practical purposes. Beans, cauliflower, pumpkin, cabbage and carrots still contain an appreciable amount of carbo-hydrates.

(45) Rickets and Deficient Diets.

E. V. McCollum, N. Simmonds, H. T. Parsons, P. G. Shipley and E. A. Park have investigated the effects of diets deficient in different respects on the production of rickets and similar diseases in rats (*Journal of Biological Chemistry*, January, 1921). More than 300 modifications of diet were studied and several of them produced typical rachitic conditions in the skeletons of rats. Diets poor in fat-soluble A vitamin or in calcium or in both produce in young rats disturbances in the growth of the skeleton and when these deficiencies are made good, the diets being otherwise unchanged, normal development takes place. The communication is a preliminary one and the authors are not prepared to hazard any statements in regard to the factors which operate to produce rickets in the child or the experimental animal. The experimental results show that the cause of these diseases might be a deficiency of fat-soluble A or calcium in the diet or a disturbance in the metabolism of these factors. At present it is only possible to say that the aetiological factor is to be found in an improper dietetic regimen. They also discuss the effect of cod-liver oil on rickets. To rats which had developed rickets as the result of dietary deficiencies, cod-liver oil was given. The experiments afford ocular and conclusive evidence of the specific beneficial effect of cod-liver oil on rats suffering from experimental rachitis, in that some substance or substances in the oil causes calcium to be deposited in the same fashion in which deposition occurs in spontaneous healing in man. Calcium was deposited in the cartilage following the initiation of the cod-liver

oil treatment in spite of the fact that in some cases the calcium intake was far below normal.

(46) Clinical Methods for Measuring the Rate of Metabolism.

During the past few years much interest has been aroused in the United States in methods used for the determination of the basal metabolic rate at the bedside of patients. The apparatus which has been most generally used for this purpose is the portable apparatus devised by Benedict. This apparatus is large, expensive and time-consuming in its use. H. M. Jones has devised an apparatus which he claims is simple and accurate in operation and yet sufficiently compact to allow the practitioner to carry it to the patient's bedside. Further, all mathematical computations have been eliminated (*Archives of Internal Medicine*, January 15, 1921). The ratio of the quantity of carbon dioxide eliminated to the amount of oxygen consumed is called the respiratory quotient. It is necessary to know the respiratory quotient, since the caloric value of a litre of oxygen, a factor which must be known, varies with the respiratory quotient. The respiratory quotient varies between 0.7 on a fat diet to 1.0 on a carbo-hydrate diet. In clinical work it is customary to assume that the respiratory quotient is 0.82, the average of a large number of determinations, and it is found that the caloric value of oxygen is not markedly affected by varying the value of the respiratory quotient. To calculate the caloric output by measuring the rate of oxygen intake and multiplying this by the caloric value of one litre of oxygen at the assumed respiratory quotient of 0.82 is, therefore, the principle on which the apparatus is designed to operate. The apparatus consists of a mouthpiece with wide flexible tubing leading the expired air into the apparatus; a tower of small pieces of charcoal, soaked in alkali, for the purpose of removing the carbon dioxide; a gas anæsthetic rubber bag to allow for expiration and inspiration and to contain the oxygen supply; and a measuring apparatus for delivering into the rubber bag a known quantity of oxygen. The measuring cylinder is also provided with an attachment for a small oxygen cylinder and with a pressure gauge containing a special dial to indicate when the desired quantity of oxygen has been released. The average time taken to consume one litre of oxygen is determined and by reference to two sets of tables, one giving the body area calculated from the known height and weight, the other giving the rate in calories for each square metre for each hour (calculated from the body area and the time already determined), the required metabolic rate is determined. Independent and comparative tests show its technical variations to be within physiological and individual variations and, therefore, adequate for the needs of the clinician as an instrument for measuring basal metabolism.

British Medical Association News.

SCIENTIFIC.

A meeting of the New South Wales Branch of the British Medical Association was held at the Out-patient Department, Royal Prince Alfred Hospital, Camperdown, on May 13, 1921, Dr. Fourness Barrington, the President, in the chair.

Dr. Sinclair Gillies demonstrated a patient who was suffering from a curious hysterical abnormality. The record of this case is published on page 63 of this issue.

The second patient shown by Dr. Sinclair Gillies was a man ill with pernicious anaemia. Dr. Gillies pointed out that the interesting feature of this case was the occurrence of nervous symptoms before the changes in the blood had become developed. When the patient was first seen there was distinct alteration in the gait, with weakness of the muscles of the lower extremities. The blood picture was practically normal. After rest in bed and general treatment the patient was able to leave the hospital almost well. He returned after a month with a recurrence of the motor symptoms. At this stage there was distinct paralysis. The plantar reflexes were extensor and the gait was markedly affected. The blood count revealed 3,500,000 per c.mm. and a colour index of 1.7. There were no nucleated red cells. The leucocytes were practically normal. At a later date the changes in the blood became more typical of pernicious anaemia.

Professor A. E. Mills presented a patient affected with hyperpituitarism (see page 64).

Professor F. P. Sandes showed a woman, aged 44 years, and stated that he would be glad to receive suggestions in regard to the diagnosis of her condition. The patient was in the habit of shooting from her left shoulder. While out shooting one day she felt as if she had received a blow between the shoulder blades and suddenly became unconscious. The unconsciousness had lasted for two hours. Since that time there had been progressive weakness of the arm. An X-ray examination had failed to disclose any definite abnormality, while the evidence of a lesion to the brachial plexus was indefinite. There was wasting of the different groups of muscles of the left arm and forearm, as well as weakness of the extensors and flexors, of the interossei, of the deltoid, of the trapezius, of the *serratus anterior* and of the *latissimus dorsi*. There was an area of anaesthesia corresponding to the supply of the medial cutaneous nerves of the arm and forearm. There was also some hyperaesthesia of the skin of the neck. The electrical reactions of the affected muscles were normal and there was no reaction of degeneration. The knee jerks were normal. Professor Sandes stated that it was obvious that the lesion extended to the area of the cervical nerves. He had cut down on the brachial plexus, but nothing abnormal had been found and the condition had not been improved. The diagnosis lay between chronic meningitis, a slowly growing tumour of the cord and haemorrhage into the cord.

Professor Sandes's second patient was under treatment for *talipes varus*. It was thought that there was a syringomyelia. There was marked wasting and weakness of the muscles of the forearm and hand on the right side as well as of the left hand. There was also wasting of the muscles below the knees. Some of the toes were absent. This was due to a curious form of auto-amputation. The toes had been anaesthetic and, as the result of knocks, necrotic areas had formed. The patient had picked and scratched these areas and ultimately removed the bones. There was typical reaction of degeneration of the affected muscles.

Dr. E. H. Molesworth presented a woman suffering from *lupus vulgaris*, a condition which was rare in Australia. The patient had had the disease for thirty years and had been advised that the climate of Australia might effect a cure. How she had succeeded in evading the vigilance of the Quarantine authorities Dr. Molesworth could not say. The disease had started with a tuberculous gland in the neck; a sinus had formed from the gland and the lupus had developed at the opening of the sinus. It had then spread on to the face, at first missing the mouth and nose. Later, both ears had become involved and almost destroyed and the process had passed on to the middle ear. Lupus patches had appeared on the back of the head, on the arms and on

the legs. Some of these patches had ulcerated. The lesions were intensely painful. While the patient was at Glasgow, she had had treatment by means of Finsen's light, X-rays, scraping, tuberculin, cauterization, etc. Dr. Molesworth was trying treatment with the acid nitrate of mercury, which had been warmly recommended by Adamson. He was inclined to the opinion that considerable improvement was being effected by the treatment.

His second patient was shown for the purpose of obtaining opinions in regard to diagnosis. There was a scaly condition of the palms of the hands and of the elbows. The scaling was more like psoriasis than any other skin condition. The lesions appeared to consist of a number of small pustules leading to the formation of a dry, scaly surface. There had been some involvement in the past of the nails. Dr. Molesworth suggested that the condition was *tinea albuginea*.

Dr. J. Morton presented a patient, aged 40 years, who was suffering from gangrene of the foot due to *endarteritis obliterans*. Both feet had been extremely painful. There had been patches of ulceration on the toes. The one foot had become gangrenous in the distal half. As no tibial pulse was felt, the leg was amputated in the upper third. Even in this situation the lumen of the main artery was extremely small and only two or three bleeding points had required ligature. The healing of the flaps had been slow, painful and unsatisfactory. A subsequent resection of bone had been required to furnish a covering, although the original flaps had been ample and without tension. As the stump healed the pain had gradually diminished and the patient's general condition had improved rapidly. The condition of the other foot had improved at the same time.

Dr. Morton pointed out that in a similar case in which he had amputated one leg below the knee nine years before, the condition of the other foot had improved and had remained comparatively well. It was as though some compensatory change had occurred. The patient shown attributed his trouble to intense cold and wet on the bridge of a transport during the war. His hands had not been affected. There was no history of syphilis and no reaction to the Wassermann test had been obtained.

Dr. B. T. Edye presented a male patient, aged 52 years, who was suffering from *osteitis fibrosa cystica*. The patient had noticed that his right tibia was becoming bowed about seven years previously. The bowing progressed slowly at first, but recently the disease advanced at a more rapid pace. There was slight, dull pain on standing and some swelling in the neighbourhood of the ankle. The patient had received a kick on the tibia at football thirty years previously. He was admitted to hospital on April 19, 1921, when it was found that there was marked bowing forwards and laterally of the right tibia and a fusiform thickening of the shaft. The crest of the tibia was less prominent at the ends of the bone than in the centre of the shaft. The limb appeared to be hotter than its fellow to the touch, but there was no tenderness. There were no changes in any other bone. The Wassermann test had been applied to the serum, but no reaction had been obtained. Dr. Dight had examined him radiographically and reported that the skiagraphic appearances suggested *osteitis fibrosa cystica*. A small sequestrum or exostosis was seen on the convexity of the curved bone. The patient was treated with iodide of potassium internally and an ointment of the oleate of mercury locally.

Dr. Edye pointed out that in the differential diagnosis consideration had to be given to chronic osteomyelitis, to syphilitic or tuberculous osteitis, to hydatid disease, to new growths, including sarcoma, chondroma and secondary carcinoma, to *osteitis fibrosa cystica*, to a condition which had been described by Dr. Breinl and Professor Priestley under the name of boomerang leg, to *osteitis deformans* (Paget's disease), to osteomalacia and to von Recklinghausen's cystic degeneration of long bones. The skiagraphic appearances, the history and the physical signs influenced him to arrive at the conclusion that the disease was *osteitis fibrosa cystica*. This disease, according to Meyerding, usually appeared before the age of 30 years, always affected the diaphysis and most often involved the proximal end of the bone. When a single cyst formed it arose from the centre of the bone, usually enlarged at the expense of the cancellous tissue and produced little or no pain. The periosteum was not thickened.

Limping, fracture and deformity of the bone were often noticed. When the disease was multilocular, a series of transparent areas surrounded by striae of irregular outline was seen. The cysts gradually encroached on the cortex, which became thin and shadowy. Later the periosteum bulged and became irregular. The periosteum was not ruptured as in malignant disease. Finally the bone was so weakened that fracture occurred on slight trauma. The fractures united with the formation of little callus. Operative treatment was required when the function of the limb was impaired, when there was marked deformity and when there was much pain and for the purpose of preventing marked deformity. It was stated that complete cure followed thorough curettage and crushing of the cortex.

Dr. Edey also dealt with boomerang leg. The condition was regarded as a chronic osteomyelitis at first appearing as a rarefying osteitis and later being converted into a sclerosing osteitis.

Professor H. Priestley agreed with Dr. Edey that there was considerable similarity between the condition of his patient's leg and boomerang leg. Boomerang leg had been first described by Black in Western Australia. A little later Dr. Breinl and he had published their description. An attempt had been made to identify a condition found in the Soudan with boomerang leg. From the published descriptions of the Soudan disease, Professor Priestley had come to the conclusion that it was not the same condition as that described by Dr. Breinl and himself. Hitherto no case had been described south of Townsville. In one instance the patient had died of an independent pneumonia and it had been possible to examine the tibia after death. The condition was a fibrosing osteitis with cystic degeneration. The compact bone was found to be greatly increased in thickness and in density. The greater part of the medulla was filled with compact bone and very little cancellous tissue remained.

Dr. G. M. B. Hales read the notes of a case of varicose aneurysm of the thigh for Dr. St. J. W. Dansey. The patient had received a bullet wound in the right thigh on April 4, 1918. The bullet had entered the anterior aspect of the thigh and had emerged from the posterior, having missed the bone. Three hours had elapsed before a dressing was applied. Ten hours later the dressing had been changed, but no attempt had been made to explore the wound. At the end of three weeks the wound had healed and the patient had been transferred to a convalescent camp. When he started to use his leg, it became swollen and painful and the patient collapsed. He had been re-admitted to hospital in May, 1918. From that time until the end of 1920 he had remained in bed. He then obtained employment which he was able to carry out in a sitting position. The swelling of the leg returned and he was again admitted to hospital in February, 1921. His leg was then much swollen and oedematous. There were two ulcers about 1.25 cm. in diameter on the anterior aspect of the lower third of the leg. The ulcers were extremely painful. The skin of the leg was deeply pigmented. The leg was treated for three weeks by rest in an elevated position and massage. The swelling had decreased, the ulcers had healed and the pigmentation had lessened. A systolic thrill was felt in the line of the femoral artery from the inguinal ligament to a point about 20 cm. lower down. A systolic bruit was heard over the same area. The diagnosis of arterio-venous aneurysm of the femoral vessels was made.

Dr. A. H. Tebbutt, D.S.O., gave a demonstration of typical lesions induced in rabbits by the intravenous inoculation of *Bacillus aerogenes capsulatus*.

Dr. Tebbutt also showed a table of types of donors and recipients for blood transfusion. He pointed out that inquiries were made for typed sera. It was usual to obtain sera of Type II. and Type III. These sera tested against cells would agglutinate Types I., II. and III., but not Type IV.. It had occurred to him that Type IV. serum might be used economically for the determination of the type or group of donor's blood. The red cells did not keep well, but the serum was active for a considerable time. If the cells of the proposed donor's blood were not agglutinated by a Type IV. serum, this blood could be safely used for transfusion.

Dr. L. G. Teece presented a patient suffering from infantile paralysis of many years' standing. The lesion had

been widespread, but had cleared up until the *tibialis anterior* was the only muscle paralysed. There was a resulting *talipes equino-valgus* and shortening of the *tendo Achillis*. Dr. Teece had divided the *peroneus longus* close to the cuboid bone, had dragged it up and had passed it down through a tunnel to the scaphoid bone to which it was attached through a hole made beneath the periosteum. In addition, the *tendo Achillis* had been lengthened. Dr. Teece had found that after the *peroneus longus* had been transplanted to act in the place of the paralysed flexor, further measures were needed to enable the patient to walk with ease. He therefore converted the paralysed muscle into a ligament. The *tibialis anterior* was fixed by Whitman's loop operation, the tendon was freed and was passed under the *extensor longus digitorum*, displacing it to the medial aspect of the foot. The tendon of the *tibialis anterior* was then fixed to the bones of the foot. The result of this was the abolition of the action of eversion of the long extensor and the support of the foot in a corrected position. The patient was still wearing an apparatus. Dr. Teece proposed to remove it after twelve months, when massage and muscle education would be applied. The *peroneus longus* was working well.

Notices.

The Scientific Committee of the Victorian Branch regret that they have been forced to make some slight alterations in the order of papers already announced. The list of meetings as amended is as follows:

August 3, 1921:

Dr. Herman Lawrence: Paper entitled "The Pathogenicity of the *Demodex* (Owen) in the Human Body and of Other Parasites Producing Skin Diseases, etc."

Dr. S. W. Patterson: Paper entitled "The Diagnosis of Enteric Fever and the Interpretation of Laboratory Reports."

Dr. K. D. Fairley: Paper entitled "The Treatment of Typhoid Fever by Intravenous Injections of Vaccines."

These three papers will be illustrated by lantern slides and microscopical preparations.

September 7, 1921.—Conjoined Meeting with the Section of Preventive Medicine. Subject: The prevention of tuberculosis. The medical members of the Public Health Association of Australasia will be invited to attend this meeting.

October 5, 1921:

Mr. Fay Maclure: Paper on the making and fitting of modern splints and fracture beds, together with a display of splints. (Meeting at the Alfred Hospital.)

November 2, 1921:

Discussion on Cæsarean Section. (Names of speakers to be announced later.)

The undermentioned have been elected as members of the Victorian Branch:

George Edwin Foreman, Esq., M.B., B.S., Melb., 1920, Alfred Hospital.

Gwilym Taliesin James, Esq., M.B., B.S., Melb., 1920, Alfred Hospital.

Miss Mary Ranken Lyle, M.B., B.S., Melb., 1921, Melbourne Hospital.

Robert Leo. Fulton, Esq., M.B., B.S., Melb., 1921, Hawthorn.

THE WAR MEMORIAL FUND IN VICTORIA.

The following are the names of additional subscribers to the War Memorial Fund: W. L. Aitken, A. S. Anderson, A. V. M. Anderson, S. S. Argyle, Mabel Baillie, Ellen M. Balaam, Alban Best, John Box, R. C. Brown, W. F. Brownell, J. Catarinich, E. T. Cato, L. J. Clendinnen, H. C. Colville, H. W. J. Cook, L. B. Cox, David Crombie, S. P. Croom, G. Cuscaden, G. R. Darby, W. N. Davies, C. E. Dennis, A. P. Derham, H. B. Devine, H. R. Dew, T. Taylor Downey, R. H. Ebsworth, K. D. Fairley, J. G. R. Felstead, R. H. J.

Fetherston, J. Fleming, A. M. Ford, G. W. Foster, N. E. Gibbs, C. W. Greene, D. P. Greenham, C. A. Griffith, W. R. Groves, F. W. Grützner, K. Hiller, Victor Hurley, A. L. Kenny, L. S. Latham, F. Blois Lawton, T. G. S. Leary, R. W. Lethbridge, E. I. Littlejohn, H. C. Lloyd, W. J. Long, Colin F. Macdonald, E. A. Mackay, J. Forbes C. Mackenzie, Arthur Marwood, R. L. McAdam, James V. McCreery, C. H. Mollison, J. Newman Morris, F. W. W. Morton, W. A. Morton, H. L. Murray, D. C. Nance, H. Alan S. Newton, J. S. Ormond, J. H. Pestell, Isabella A. Phillips, J. S. Reed, M. A. Schalit, S. V. Sewell, Patrick Shaw, M. D. Silberberg, N. M. Simpson, J. H. Sleeman, James A. Smeal, Julian A. R. Smith, Herbert Spence, H. R. Stanley, J. Steel, C. V. Stephens, A. H. Sturdee, W. H. Summons, F. A. Sweetnam, G. U. Taylor, J. L. Thompson, Ian Wartzki, R. F. Watson, Albert Weigall, A. E. R. White, A. M. Wilkinson, T. A. Wright, J. S. Yule.

In the list submitted to the *Journal* and published in the issue of July 2, 1921, page 14, and July 9, page 58, the names of Dr. S. O. Cowen, Dr. Ramsay Mailer and Dr. J. W. Wilkinson have been included in the place of Dr. B. S. Cowen, Dr. Melrose Mailer and Dr. J. F. Wilkinson.

The total number of subscribers up to the present time is 186. Time is pressing and a considerable amount of money is still required to enable the Council to carry out the proposal to erect a suitable memorial to those who have died on active service. There are approximately 1,000 members of the Victorian Branch. Each one of these thousand practitioners is asked to contribute £1 ls. We appeal to those who have not yet subscribed to send their cheques without further delay to Dr. J. W. Dunbar Hooper.

Naval and Military.

APPOINTMENT.

In the *Commonwealth of Australia Gazette*, No. 58, of July 14, 1921, the following announcement appears under the heading of the Permanent Naval Forces of the Commonwealth (Sea-Going Forces):

Surgeon-Lieutenant Ronald Cuttle, M.B., Ch.B., is transferred to the Retired List. Dated 12th May, 1921.

THE NURSES' AWARD IN QUEENSLAND.

In the *Queensland Government Gazette* of June 23, 1921 (see *The Medical Journal of Australia* of June 25, 1921, page 520) the Nurses' Award granted by the President of the Court of Industrial Arbitration of Queensland, Mr. Justice McCawley, is published in full. The President does not recognize the claim of certain religious bodies, including the Mater Misericordiae Public Hospital, for exemption from the Award as valid. On the other hand, he has been induced to exclude nurses not engaged in hospitals and states that he is satisfied that if the Australasian Trained Nurses' Association were to be dealt with at all, it should be under an award dealing with them alone.

He has fixed the minimum salaries for trainees at £36 per annum for the first year, £45 for the second year, £65 for the third year and £75 for the fourth year. The trainee is not entitled to an increase in salary until she has passed the examination for the year. Assistants in nursing are to be paid £10 per annum in addition to the salary prescribed for a trainee of like experience. Staff nurses are paid £110 per annum and sisters £120 to £160 per annum, with annual increments of £10. Matrons in hospitals whose average of occupied beds is under eleven, are to receive £160, from 11 to 35 beds £170 to £200, from 36 to 100 beds £200 to £230, from 100 to 200 beds £230 to £270, from 200 to 300 beds £270 to £320 and over 300 beds £320 to £370 per annum. In each case the salary is increased by £10 per annum. All trainees and nurses are to be provided with free board and lodging and suitable uniforms, which are laundered free of charge. In lieu of these arrangements an allowance of 20s. per week for board, 5s. per week for lodging, £6 6s. for uniform and 2s 6d. a week for laundry is provided. When a trainee is transferred from one training school to another, the time previously served in training shall be counted in computing her salary. The above conditions do not obtain in regard

to trainees in the Lady Bowen Hospital or other midwifery training hospitals.

Trainees and nurses are not to work more than 112 hours per fortnight inclusive of mealtime, nor more than 10½ hours consecutively. At least half an hour should be allowed for meals and for nurses on day duty meals are to be not more than five hours apart. In hospitals with 25 or more occupied beds, each trainee or nurse is to have one whole day and one half day off each week. Instead of one whole day and one half day in each week, three whole days off may be allowed in each fortnight.

All time work in excess of the ordinary working hours shall be paid for at the rate of time and a half.¹

Each employee in a hospital shall be entitled to four weeks' holiday each year on full pay, in addition to the weekly day and a half. The time of the taking of holidays shall be arranged to suit the convenience of the administration of the hospital. In the case of illness the trainee or nurse is to be granted "sick leave" without loss of salary for a period not to exceed three weeks.

Trainees and nurses are not to be made financially responsible for breakages, except they be due to negligence. When a charge is made, it shall not be greater than one third of the value of the article broken and shall not exceed 5s. for any one article.

If a nurse is called upon to perform special duties for which a higher salary than she is receiving is prescribed, she is to be paid the higher salary for the period of such duty beyond four weeks. This clause does not apply to trainees, nor to relief duty undertaken when another nurse is on holiday or "sick" leave.

The general provisions of the award include a clause to the effect that no employee shall suffer any loss by way of salary, allowance or position by reason of the award. When a trainee or nurse is charged with any offence or failure of duty, a copy of the charge is to be given to her and she is to have a full opportunity to meet the charge. In the meantime, however, she may be suspended from duty. Employers shall not discriminate against members of the Queensland Nurses' Association either in respect of employment or of treatment when employed.

For every eight trainees in a training school there shall be at least one registered nurse. As far as is practicable separate rooms or suitable cubicles are to be provided for each employee in hospitals. There is the usual clause concerning the time and wages book. The award came into operation on July 1, 1921, and is to remain in force for twelve months.

Obituary.

VICTOR JOSEPH EMANUEL ZICHY-WOINARSKI.

Victor Joseph Emanuel Zichy-Woinarski, who died suddenly of heart failure on May 27, 1921, at Balmarring, near Mornington, while on his way to visit a patient, was the fourth son of the late Captain George G. Zichy-Woinarski and the last surviving of three medical brothers.

He was born at Fitzroy, Victoria, in March, 1865, and was educated at the Melbourne Church of England Grammar School and at the University of Melbourne. At the Grammar School, which he entered in 1878, he was under the late Professor Morris for five years and was distinguished as an athlete and footballer. Many of his contemporary schoolmates became his colleagues in the medical profession, amongst them being C. H. Mollison, C. W. Hardy, W. Kent Hughes and the late H. W. Bryant.

Victor Zichy-Woinarski qualified for his M.B. degree in 1892 and for the degree of Ch.B. in 1894. He married Gertrude Mary, only daughter of the late Henry Brind, of Ballarat, and sister of Dr. H. H. Brind, of Byfleet, Surrey, England. A widow, two sons and one daughter survive him.

Dr. Woinarski commenced the practice of medicine at Ballan, Victoria, and after a short period in that district

¹ The effect of this regulation becomes clearer when it is remembered that for a trainee in the third year receiving £65 per annum the rate of pay is 5.35 pence per hour. The lucky trainee would therefore receive a gratuity of under 2½d. for each hour worked overtime, in addition to her ordinary pay.

moved to North Melbourne in which suburb he conducted a busy general practice for a term of 21 years. He enjoyed the confidence and good will of his neighbouring practitioners who frequently availed themselves of his capabilities as an anaesthetist.

In 1915 he disposed of his practice to Dr. James Booth and later, when urgent call was made for medical men, he served with the Australian Imperial Force in Egypt until invalided back to Australia. After his return he commenced practice at Morningside in 1917 in which town he was residing at the time of his death. For some time prior to his decease he held the office of President of the Returned Soldiers' and Sailors' League at Morningside.

WILLIAM IRWIN.

We regret to record the death of Dr. William Irwin, which took place in a private hospital at Darlinghurst, Sydney, on May 13, 1921.

He was born in Newcastle on April 15, 1869. He received his secondary education at the Boys' Public High School, East Maitland, where he matriculated. Having decided on a medical career, he followed the custom of the time and sailed for Scotland. In 1893 he graduated as bachelor of medicine and master of surgery of the University of Glasgow. For some years he practised his profession in England, and later became a Fellow of the Royal College of Surgeons, Edinburgh. He returned to Australia and carried on general practice at Newcastle, Moree, Singleton and Maitland. He was particularly well known and respected in the Hunter River district, where his family was born and educated.

On the outbreak of war in 1914 William Irwin, though not enjoying the best of health, offered his services to his country. He was stationed at Victoria Barracks, Darlinghurst, for a time and was then transferred to the training camp at Liverpool. Finally he was appointed medical officer in charge of the out-patients' department at the Garrison Hospital. At the completion of the war he was demobilized, but the poor state of his health, aggravated by the burden of his military duties, did not permit his return to private practice. His last illness was long and distressing. The cause of death was arterial hypertension and chronic nephritis.

William Irwin was a capable, popular and kindly practitioner. A keen lover of sport, his interest in cricket, football and racing remained unconquered almost to the day of his death. He was a staunch friend and a devoted husband and father. He leaves a wife and three children.

It has been announced that Dr. Eric Arthur Woods, a 1918 graduate of the Oxford University, has died of pneumonia in Hong Kong. He was registered in Victoria in 1918, the address given being that of his parents.

Correspondence.

THE PREVENTION OF DIPHTHERIA.

Sir: In reference to the statistics of the health of Australia appearing in your issue of the 18th ult., the figures relating to diphtheria are very striking. In view of the great number of cases and high death roll, surely some further steps towards the prevention of this dread disease should be taken. In the Schick test and inoculation with toxin-antitoxin we have means of testing for and inducing immunity from this infection; and, theoretically at least, these should prove as potent for the elimination of diphtheria, as was Jenner's famous discovery in relation to small pox.

Sufficient evidence should by this time be forthcoming as to the efficacy of these methods and the health authorities should be able to state definitely whether or not diphtheria could be banished by these means. If so, the necessary legislation could be passed and the testing and inoculation done much in the same way as vaccination against small pox was done in former days. Universal testing and inoculation may seem at first sight a big price to pay for combating a single disease, but if the continent could be spared

the attendant anxiety and expense of 18,183 cases of diphtheria and the loss of 805 precious lives, the reward would surely be more than commensurate.

Yours, etc.,

RENFREY G. BURNARD.

Mount Gambier, South Australia,

July 4, 1921.

TROPICAL AUSTRALIA.

Sir: The letter of Dr. Clif. Tucker on this subject is very interesting. He describes a region of 400,000 square miles in eastern Queensland about 100 miles from the sea, which he says is quite fit for development by white people.

I have repeatedly pointed out that in my judgement this statement is perfectly accurate, provided that the housing conditions are of such a character that women can work without being exposed to an excessive wet bulb temperature.

I obtained from the United States before the war plans of the houses used in the Panama Canal with the hope that the Commonwealth Government would erect a sample house for purpose of illustration. The matter is now in the hands of Dr. Cumpston, Federal Director-General of Health, and was referred to at the Brisbane Conference. If Dr. Tucker will look at the map of wet bulb isotherms the reason for his conclusion is obvious. The region he refers to in January is all below the mean wet bulb temperature of 75°, whilst in July practically the whole of it is below the mean wet bulb temperature of 60°. Those who refer to the map will further notice that the isotherms curve southward along the coast and curve northward to the west of the coastal range. The temperature is on the warm side, but offers no insuperable difficulty whatsoever to the development of a vigorous white race.

On the other hand, the north-west coast of Australia shows near Broome a wet bulb temperature of 80° in January and of 65° in July, a difference of 5° mean wet bulb, which is material. As regards the explanation given by Dr. Tucker, namely, that there is a great difference between the wet and dry bulb temperatures, I do not think that it is quite as important a factor as suggested. The mean wet bulb reading for people who clothe themselves in a manner suitable to the climate, furnishes a tolerably correct index of discomfort.

Yours, etc.,

JAMES W. BARRETT.

July 13, 1921.

MEDICAL ETIQUETTE.

Sir: It would seem that "Senior," like many of the older-established practitioners, is feeling the effects of the keen competition mainly caused by the return of numerous war graduates.

One realizes his feelings, as undoubtedly too many ethical considerations are sacrificed to need or greed, but there are two sides to this question, as to many others.

Many medical men who could not or would not volunteer, did very well out of the war and they cannot expect to keep their increased practices; also, no medical man has a monopoly of a district or list.

But, to be constructive rather than destructive, may I suggest that "Senior" and his fellows direct their energies to assisting, not resisting, the younger men.

Whilst the normal objective of a medical graduate is to acquire a moderate general practice, there are many of us who are willing or compelled for financial reasons to take salaried appointments. How many "Seniors" go out of their way to help to make these appointments attractive? Consider the miserable pay given to medical officers of various State Departments (especially Quarantine and Lunacy). The Commonwealth pays its Quarantine officers fairly well, but underpays the Naval and Military medical officers.

Reading through a recent series of articles in *The Medical Journal of Australia* on various government and other salaried appointments, I was struck by their large number and low pay. It is on these positions that many a young graduate depends for his permanent livelihood or opportunity to save and buy a practice.

When the salaried appointment ceases to be attractive, the junior often has no alternative than to "squat" and compete with an older man for a share of his practice. The competition should be fair, but keen it must undoubtedly always be.

One reads many reports of actions taken and decisions arrived at by various Branches of the British Medical Association in Australia on matters affecting the financial condition of the general practitioner, but I sadly fear that the civil servant is usually left to fend for himself. Although we have a number of medical men representing various constituencies in both State and Federal Parliaments, one rarely hears of any action on their part to improve the lot of the medical civil servant.

Let, then, the senior members of our profession, to whom we juniors look for help as well as guidance, devote more time and labour to secure an increase in the emoluments of all medical officers whose salaries compare unfavourably with an average practitioner's income and let more of the senior practitioners take juniors as assistants or partners.

Yours, etc.,

"JUNIOR."

Cloth cases for binding *The Medical Journal of Australia* of standard pattern and with standard lettering can be supplied at four shillings each. Orders should be sent in to the office of this *Journal* as soon as possible, in order to insure early delivery.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser," page 33.

Commonwealth Public Service: Two Quarantine Officers.
Department of Public Health, Victoria: Five Medical Officers.
Public Service of Western Australia: Two Medical Officers.
University of Sydney: Professor of Psychiatry.
Sydney Hospital: (i.) Honorary Assistant Aural Surgeon, (ii.) Honorary Dentist, (iii.) Honorary Operating Dentist.
Richmond District Hospital, Queensland: Medical Officer.

Medical Appointments.

IMPORTANT NOTICE.

Medical practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429 Strand, London, W.C..

Branch.	APPOINTMENTS.
NEW SOUTH WALES. (Hon. Sec., 30-34 Elizabeth Street, Sydney.)	Australian Natives' Association. Ashfield and District Friendly Societies' Dispensary. Balmmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham Dispensary. Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney. Marrickville United Friendly Societies' Dispensary. North Sydney United Friendly Societies. People's Prudential Benefit Society. Phoenix Mutual Provident Society.

Branch.	APPOINTMENTS.
VICTORIA. (Hon. Sec., Medical Society Hall, East Melbourne.)	All Institutes or Medical Dispensaries. Australian Prudential Association Proprietary, Limited. Manchester Unity Independent Order of Oddfellows. Mutual National Provident Club. National Provident Association.
QUEENSLAND. (Hon. Sec., B.M.A. Building, Adelaide Street, Brisbane.)	Australian Natives' Association. Brisbane United Friendly Society Institute. Stannary Hills Hospital.
SOUTH AUSTRALIA. (Hon. Sec., 3 North Terrace, Adelaide.)	Contract Practice Appointments at Renmark. Contract Practice Appointments in South Australia.
WESTERN AUSTRALIA. (Hon. Sec., 6 Bank of New South Wales Chambers, St. George's Terrace, Perth.)	All Contract Practice Appointments in Western Australia.
NEW ZEALAND: WELLINGTON DIVISION. (Hon. Sec., Wellington.)	Friendly Society Lodges, Wellington, New Zealand.

Diary for the Month.

July 26.—N.S.W. Branch, B.M.A.: Medical Politics Committee: Organization and Science Committee.
July 27.—Vic. Branch, B.M.A., Council.
July 28.—S. Aust. Branch, B.M.A..
July 28.—Clinical Meeting at the Hospital for Sick Children, Brisbane.
July 29.—N.S.W. Branch, B.M.A..
Aug. 3.—Vic. Branch, B.M.A..
Aug. 5.—Q. Branch, B.M.A..
Aug. 9.—Tas. Branch, B.M.A..
Aug. 9.—N.S.W. Branch, B.M.A., Ethics Committee.
Aug. 10.—Melb. Paediatric Society (Vic.).
Aug. 11.—Vic. Branch, B.M.A., Council.
Aug. 11.—Brisbane Hospital Clinical Society.
Aug. 12.—N.S.W. Branch, Clinical.
Aug. 12.—Q. Branch, B.M.A., Council.
Aug. 12.—S. Aust. Branch, B.M.A., Council.
Aug. 16.—N.S.W. Branch, B.M.A.: Executive and Finance Committee.
Aug. 16.—Illawarra Suburbs Med. Assoc. (B.M.A.).
Aug. 17.—W. Aust. Branch, B.M.A..
Aug. 19.—Eastern Suburbs Med. Assoc. (N.S.W.).
Aug. 19.—North Eastern Med. Assoc. (N.S.W.).

EDITORIAL NOTICES.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned.

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